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## *Prelude to Rio*

### **How Bush's Science Aide Got Gored on Capitol Hill**

The worst that can be said about a Presidential Science Adviser is that he misinforms the President and misrepresents scientific and technical issues to the public. The commission of both sins was charged to D. Allan Bromley, the President's Assistant for Science and Technology, by Senator Al Gore (D-Tenn.) in an abrasive two-hour encounter on environmental issues on May 21.

Lectured, assailed, and admonished by Gore, Bromley strongly denied the allegations and accused the Senator of blaming him for environmental nonsense uttered by senior Administration officials. But Bromley was extremely vague about what he has contributed to the environmental education of George Bush. And he finally conceded that, as White House Science Adviser, he has retreated from the strong environmental stance that he took as Professor of physics at Yale.

Gore, who has staked out the environment as his chief Senatorial concern, afforded Bromley only a few of the rhetorical courtesies that legislators customarily bestow upon senior scientists in the witness chair. Obviously well briefed for Bromley, who apparently did not anticipate an inquisition, Gore brought the hearing to an end by declaring that on environmental matters, Bromley "has not well served the country, the President, or future generations."

The hearing drew virtually no press attendance because the only announced topic was the routine confirmation of a noncontroversial nominee, Karl Erb, for an inconspicuous position, Associate Director of the White House Office of Science and Technology Policy (OSTP), of which Bromley is Director. The proceedings in such cases are usually ceremonial, congratulatory, and brief. But with the approach of the Rio Earth Summit, Gore had an additional item on the agenda: The origin of President Bush's insistence that too many important scientific "uncertainties" exist to justify rapid reductions in the emission of greenhouse gases.

After Bromley introduced Erb to the Commerce, Science, and Transportation Committee, the nominee was dispensed with in a friendly few minutes. Gore then said he wanted "to take a little time here to look at the larger picture and examine the role of OSTP within the policymaking process." The organization has undergone a revival from the neglect of the later Reagan years, Gore said, "But how effective has OSTP been? Is science really informing the policy process at the White House? I am not sure that it is, at least not when it comes to global warming," Gore said.

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## *Slogging on in Bethesda*

### **NIH Still Deep in Swamps Of Strategic Planning**

"Constitutions should be short and obscure," said Napoleon.

This gift of wisdom has regrettably not been adapted to the task of writing a Strategic Plan for the National Institutes of Health, a chore on which innumerable mandarins and foot soldiers of biomedical research have been laboring for over a year. So far, they have produced a 500-page draft that, by many accounts, is considered to require a good deal of work.

Last week, some 35 of them, eminences of academe, science, and medicine, were at it again, ringed around a table in Bethesda, quibbling inconclusively over the pro-

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## **In Brief**

Margot O'Toole will receive a \$10,000 award June 25 for sounding the alarm in what has come to be known as the Baltimore Case. The award, established by Michael Cavallo, a Cambridge, Mass., businessman, recognizes people who risk their necks in the public interest, which O'Toole did in 1986 when, as a postdoc, she questioned a paper co-authored and stoutly defended by Nobelist David Baltimore. NIH later concluded that Baltimore's co-author had faked data for the paper, as O'Toole had charged. Scheduled to speak at the award ceremony: Rep. John Dingell (D-Michigan), who has savaged NIH for initially bungling the inquiry.

University of Michigan President James Duderstadt, Chairman of the National Science Board, came out looking foolish in a newspaper exchange with a Congressman who has criticized NSF for its past insistence that the US faces a massive "shortfall" of scientists. Writing June 2 in the Washington Post, Duderstadt said NSF was being criticized for "a single preliminary research study performed five years ago." Rep. Howard Wolpe (D-Michigan) replied on June 13 that the study was repeatedly revised between 1987 and 1991, widely distributed to the press and Congress, and cited more than 50 times in public by former NSF Director Erich Bloch.

Engineering salaries have failed to match inflation for the fifth straight year, and unemployment among engineers is at 4 percent, a record for recent years, according to a nationwide survey by the American Association of Engineering Societies. On the bright side, the survey found that beginning salaries have perked up, with the median this year at \$34,600.

## ... Has Bush Ever Had a Briefing on Global Change?

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The Senator then proceeded into a lengthy monologue largely directed at the Administration's claims of scientific uncertainties on global warming. "It often seems that the Administration is ignoring the scientific data when it comes to global climate change," Gore declared. "And if that is the case, part of the responsibility is yours," he told Bromley, "because it is your job to bring to the President's attention, in clear terms, the scientific advice which should inform his decisions."

Gore asked Bromley whether he was familiar with the research of Sherwood Idso, a Phoenix-based US Department of Agriculture scientist who has found favor in White House political circles because of his cheerful findings on the greenhouse effect. According to Idso, higher agricultural productivity will be the principal result of a CO<sub>2</sub> buildup. The Idso thesis is embodied in a film, *The Greening of Planet Earth*, which is distributed by the National Coal Association and Western Fuels. Asked by Gore if he had seen the film, Bromley said he had not, "but I know about it." Gore asked for Bromley's "appraisal of the scientific merits of this film."

Bromley sidestepped the role of scientific film reviewer, and asserted that he has never had "any difficulty communicating with the President." As for Idso's research, Bromley said it "shows that enhanced concentrations of carbon dioxide can, in fact, under laboratory conditions, cause enhanced growth rates in certain plants ... a species of orange plant, orange trees. But I would have to say that this is only the beginning of a research program that is very important," Bromley added.

Gore responded that Idso's film "has had a big influence on views within the Administration," and asked Bromley to grade the film for scientific accuracy.

"I am afraid, sir," Bromley replied, "that I would have to say that it oversells and overgeneralizes."

"Well, the Administration has sponsored showings of this film," Gore said. "The Department of Energy and Commerce sponsored a debut of *The Greening of Planet Earth*. The Secretary of Energy spoke at the event. And again, individuals in the Administration have repeatedly cited this film as a reference point for their understanding of the science. Have you done anything to correct the misimpression within the Administration and potentially within the President's mind?" Gore asked.

Bromley said the cited cabinet secretaries, and other department heads, have been "exposed to what I felt was the most up-to-date scientific summaries that I could find, given by people like Bob Watson from NASA, Dan Albritton from NOAA, people from the general scientific community." The Science Adviser added that "this particular movie is something you will, of course, recognize, as totally out of my control."

Gore. Now, has the President himself been briefed by

these individuals, Watson and Albritton? Recent news accounts state that the President has never had a scientific briefing on this subject.

**Bromley.** That, of course, is not true. But he has not been briefed, to the best of my knowledge, by either Watson or Albritton.

**Gore.** Why not? If they are leading the scientific assessment for the government, and this is such an important question, why would they not brief him?

**Bromley.** Well, I think the answer to that, sir, is the President's time is extraordinarily valuable and he does not want lengthy, detailed scientific briefings because he does not have a scientific background himself. And what he wants is the kind of concentrated overview that he gets from me and the members of his [President's] Council of Advisors for Science and Technology [PCAST].

**Gore.** Who has briefed the President on global climate change? Who has given the scientific briefing to him?

**Bromley.** The members, for example, of PCAST who have expertise in this area. Tom Lovejoy, whom I think you know from the Smithsonian.... Norman Borlaug, the father of the Green Revolution ... Dan Nathans, of course, who has [the] Nobel Prize for his work in the stages of recombinant DNA technology, is well aware of a lot of this.

**Gore.** They have given the President a briefing on global climate change?

**Bromley.** We have discussed with the President matters of global climate change, yes.

**Gore.** Has the President ever had a specific scientific briefing on global climate change?

**Bromley.** I have not given him a specific one that was on that subject alone. That has certainly been part of our discussion on many occasions. And I am quite confident that Bill Reilly [Administrator of the Environmental Protection Agency] has talked with him on a number of occasions where this has been a significant part of the discussion. But we have never scheduled specifically—today we are going to meet with the President to talk about the science of global climate change—no.

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## ... Senator Challenges Bromley on Scientific Data

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Returning to the Idso film, Gore asked Bromley whether he knew that the "coal industry financed it, and gave \$250,000 to a company that Dr. Idso set up, and a company of which his wife is President."

Bromley repeated he had "never seen the film" and added, "nor do I intend to."

Gore questioned whether it was desirable to have cabinet officers sponsoring the film and "individuals within the Administration citing it as a reason why we do not really have to worry much about global warming." Charging that Idso, a government employee, "is promoting uncertainty in the minds of policymakers so as to allow the continued belching of greenhouse gases at undiminished rates," Gore said: "That is a little bizarre, is it not?"

Bromley agreed that "it does sound somewhat bizarre," but insisted that "I do not have any personal information on this." [Concerning Idso, Bromley notified Gore on June 4 that "My understanding is that USDA is conducting an official inquiry into the circumstances you raised during the hearing."]

Gore asked Bromley whether he was familiar with a report, *Global Warming Update*, published recently by the George C. Marshall Institute, a conservative think tank in Washington, DC, discounting the dangers of global warming. Bromley replied that the report "has never been peer-reviewed," and added that "in this particular case, the data may have been used selectively."

Then why, Gore asked, is the Marshall report "repeatedly referred to by important members of the Administration as a source for their belief that uncertainty predominates, and that we do not yet know enough to take the kind of action that was urged upon us in the recent negotiations on a climate-change treaty?"

Bromley responded that it "is unfair to claim that the Administration is using this Marshall report. Members may. I cannot control that."

Gore referred to a speech Bromley gave last December in Baltimore to an international meeting of chemists, in which, the Senator charged, Bromley exaggerated the uncertainties of global-change research. In the speech, Gore continued, "you stated that 'preliminary work suggests that the second- and third-order processes involving methane as a greenhouse gas may be of substantial importance and of opposite sign to the first-order processes.'"

Gore asked, "Now what evidence did you have at the time to support that statement?"

Bromley replied that in preparing the speech he was briefed by Watson of NASA and Albritton of NOAA, but "subsequently, it has turned out that the statements that were made during that briefing were more precise than they perhaps should have been. And that there is more uncertainty, in fact, than was indicated." Bromley added that the subject is under study with greater computational power,

which indicates that "the results from the first runs would have to be modified.... And so that is the uncertainty that I refer to." He assured Gore that when he gave the speech, he used the "best information available."

Gore. Well, the only person in the scientific community that my staff and I have been able to find, in the literature or on the public record, who has ever indicated that the indirect effect of methane on global warming is negative is you....

Bromley. Senator, I would be incredibly insulted if you were, in fact, suggesting that I made up this—

Gore. No, of course not.

Bromley. —for the purposes of the Baltimore meeting.... I told you where I got these numbers.

Gore. Of course I am not suggesting, in any way, that you made it up. And please, let me correct your impression that might even be a possibility. Not at all. But you may also—you may take offense at what I am really suggesting, and that is that your inclination to emphasize uncertainties in the science of global warming may be leading you into errors, and may be resulting in advice to the President of the United States on the most important scientific question he faces, that leads him to believe that the science of global warming is fraught with considerably more uncertainty than the scientific community believes it is.

Referring to the Baltimore speech, Gore asked Bromley to explain his assertion that sulfur dioxide reductions mandated in 1990 by amendments to the Clean Air Act would help reduce CO<sub>2</sub> emissions. How? the Senator asked.

Bromley. By requiring more efficient operation of the plant.

Gore. Such as—by what technique?

Bromley. I do not know the details, sir. I would be happy to get them for you.

Gore. Well, you made an assertion in a public-policy forum....as the President's Science Adviser, in a highly charged context, where decisions are going [to be made] about proposed actions to combat global warming. And you are making the assertion that the Clean Air Act amendments have already done something about global warming. And I now ask you exactly how does that work and you say you do not know.

Bromley. I am not prepared to detail the exact mechanisms done on the utility plant. But I will get them for you.

Gore. Well, what makes you think there are some?

Bromley. Because people I trust tell me.

Gore. Who?

Bromley. The people who brief me on the specific activities in the Clean Air legislation.

Gore. Are you familiar that scrubbers, the technology of choice to limit sulfur dioxide, typically result in a 4-percent increase in CO<sub>2</sub> for each BTU of energy produced?

Bromley. No, I was not aware of that.

Gore. That is a fact. If you wish to check it and correct

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## ... Life Was Much Simpler in Academe, Bromley Says

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the statement for the record, you are certainly welcome to do so.... [Bromley subsequently sent a memo to Gore citing various provisions of the Clean Air Act that he said would reduce CO<sub>2</sub> emissions.]

Noting that the White House had opposed a Clean Air amendment concerning CO<sub>2</sub> that he had offered, Gore said: "So, when I hear statements by the President's Science Adviser and others prominent in the Administration that the Clean Air Act constitutes a response to global warming, I am puzzled."

Gore then brought up the name of F. Sherwood Rowland, Professor of Chemistry, UC Irvine. "He is a scientist of some renown in the field of global climate change research. Would you agree?" the Senator asked.

**Bromley.** To some degree.

**Gore.** Do you wish to elaborate?

**Bromley.** No.

**Gore.** He was among those who heard your speech in Baltimore and was quoted in the *Baltimore Sun* as saying that he did not "recall in 17 years of science hearing a talk with so many errors." He said that it was his opinion that you, Dr. Bromley, were "out of touch with the scientific community" and that "President Bush is receiving abysmal scientific advice." Do you question Dr. Rowland's expertise on the science of global climate change?

**Bromley.** He is entitled to his opinion. But I think I should also tell you that following that statement by Dr. Rowland at Baltimore, he was taken aside by a number of senior people there. And I think perhaps he would, at this point, say that he regretted his statements.

**Gore.** That is not the impression I have received.

Gore next brought up the Intergovernmental Panel on Climate Change (IPCC), noting that it had reported an increase in greenhouse-gas emissions and that "These increases will enhance the greenhouse effect, resulting, on average, in an additional warming of the earth's surface."

Asked whether he agrees, Bromley replied, "It is not a question of agreeing or disagreeing.... The context is that we have not seen any unambiguous signal for greenhouse warming that we can attribute to carbon dioxide in the atmosphere.... Eventually we will see one if we keep putting carbon dioxide into the atmosphere."

Noting that the IPCC report was produced over three years by "300 of the leading climate-change researchers in the world," Gore asserted that Bromley's skepticism "may be a possible explanation for why the position of the President of the United States is at odds with the position of every other leader of every other industrial country in the world. He may not be getting the same advice that the world scientific community is managing to filter through to all of the other leaders of the world. You are in charge of that filter," the Senator told Bromley.

Referring to a speech on global warming that Bromley

gave in 1988, a year before his White House appointment, Gore noted that "you said the consequences for our descendants may well be catastrophic. We have no time to waste." Asked whether he still held those views, Bromley replied that his 1988 expressions "are perhaps a little more extreme than they are now."

Gore noted that in the same speech, Bromley stated that "it is essential for us to realize that we who use a disproportionate share of the planet's energy must take the lead in reducing utilization of fossil fuels."

**Gore.** Do you still believe that is the appropriate response?

**Bromley.** Life is much simpler when viewed from an academic environment than when one recognizes all the aspects of the situation....

As the hearing approached a conclusion, Gore spoke a few words of praise for Bromley, telling him that "I know of so many instances where you have done wonderful and valuable work on behalf of this country and generations to come."

But he capped the proceedings with a bitter assessment of the performance of a man who holds a noble conception of the role of Presidential science advice. Telling Bromley that his environmental advice "has not well served the country, the President, or future generations," Gore added:

"I think it has served the President's short-term political needs by providing him some comfort that there is so much uncertainty surrounding the science of global warming that he need not feel the same sense of urgency that every other leader of an industrial nation seems to feel...."—DSG

## New Stirrings in Gallo Case

The investigation of Robert Gallo has started to sizzle following SGR's publication June 1 of a devastating rebuttal of an NIH report that exonerated the renowned researcher of scientific misconduct associated with identification of the AIDS virus.

SGR was bound by a vow of silence as to the origin of the rebuttal, but the *Chicago Tribune* reported on June 14 that it was prepared "with the assistance of Suzanne Hadley," who was the chief investigator of the case at NIH. Hadley resigned from the investigation last year after NIH Director Bernadine Healy demanded that she soften some of her comments about Gallo.

Hadley has since been on detail to the House subcommittee chaired by Rep. John Dingell (D-Michigan), a longtime critic of NIH's handling of misconduct charges. Following publication of the SGR report, the Department of Health and Human Services sent Dingell's staff 32 detailed questions concerning the doubts raised about the exoneration of Gallo.

Last week, NIH announced that Gallo would meet with the press on June 24 to answer written questions submitted in advance.



## ... Rewording Statements of NIH Mission and Goals

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posed wording of the "mission statement" and "goals" for the Plan.

The Plan, a heartfelt initiative of Director Bernadine Healy almost from the start of her regime at NIH 14 months ago, has become a major consumer of biomedical manpower. Healy has decreed it high priority for the intramural staff at NIH. Senior NIH managers have put all else aside to discuss it at two so-called retreats. The Plan has been the subject of six regional meetings with NIH clients in recent months, with attendance totaling some 1500. From June 23-25, some 200 extramural scientists are scheduled to review the Plan at NIH. It cannot be established that solutions to dread diseases may be delayed by the diversionary effects of this exercise, but the thought is impossible to avoid.

To an NIH official who normally conceals exasperation over this endeavor, SGR speculated that the Plan has occupied "hundreds of thousands of biomedical man hours." Came the response: "At least."

Many more hours were added to the toll June 10 as Healy met with the 14-member Advisory Committee to the Director of NIH for a one-day meeting, of which about one-third was devoted to the Strategic Plan. The Committee members include David Challoner, Vice President for Health, University of Florida; Philip Leder, Professor of Genetics, Harvard; Donna E. Shalala, Chancellor, University of Wisconsin-Madison, and Matthew D. Scharff, Director of the Cancer Center, Albert Einstein College of Medicine. Joining them were 18 members of NIH Advisory Councils, almost all occupants of senior positions at universities throughout the country. Also in attendance were dozens of NIH staff members of high and low rank.

Before the discussion began, an invited address was delivered by a member of the Advisory Council, Richard Corlin, a California physician who is Vice Speaker of the House of Delegates of the American Medical Association. Corlin, who employs a hearty style of oratory not often heard in the halls of NIH, urged NIH to emulate the vigor of NASA in telling its story to the American public. "We don't benefit from hiding our light under a bushel," he said.

Warning that American institutions suffer from shortsightedness, Corlin urged the audience to consider that Schlitz lost a large share of the beer market after it switched to a cheaper brand of hops, which, he explained, provide flavoring for beer. He noted, too, that "no nails are made in America today." He said that the AMA has the means, through print and TV cable, to help NIH communicate with the public.

With Director Healy reassuming command, the assemblage was then confronted with the task of reviewing a "mission statement" and four statements of goals that had been examined at the NIH regional meetings. In response to comments at the meetings, NIH had drafted alternative statements, which the members of the Director's Advisory

Committee were asked to evaluate.

The "current" statement declared the mission of NIH to be: "Science in the pursuit of knowledge to extend healthy life and reduce the burdens of illness and disability."

The proposed revision expanded the statement to read: "The mission of the NIH is science in pursuit and application of knowledge about the nature and behavior of living systems to extend healthy life, reduce the burdens of illness and disability, and foster the promotion of health and thereby serve the public."

Leder objected that the proposed change "allows the public to regard all that we do as related to the extension of human life." It left little room "for knowledge for its own sake," he observed.

"We are in health," replied Robert Dresing, President of the Cystic Fibrosis Foundation, arguing in favor of the proposed change.

Healy commented that "knowledge for the sake of knowledge is not our mission." She added that "What we're trying to say is that fundamental knowledge is critical to NIH's future."

"There's an undertone of applicability that may distort our ability to meet the mission," said Professor Mary Osborn, School of Medicine, University of Connecticut Health Center.

The discussion sauntered on along those lines and then, turning to the statements of goals, proceeded to become further entangled in compositional underbrush. Goal two, in "current" form, stated that NIH aims: "To provide the scientific base that will strengthen the Nation's capability to deliver more effective disease prevention and health care in order to enhance the quality of its citizens' lives."

In revised form it read: "To provide the scientific base and human resources that will strengthen and directly contribute to the Nation's capability to deliver more effective disease prevention, health promotion, and health care in order to enhance the quality of human life in the United States and internationally."

The proposed revision brought an objection from the AMA's Corlin, who said, "NIH doesn't provide the human resources,"—it only provides support for them, he insisted.

Challoner, of the University of Florida, said that "other resources than human are important."

Healy interjected that the modified goal statement signified that "NIH has taken on responsibility for providing the scientific base."

Osborn, from the Connecticut Health Center, objected that "scientific base" seemed to suggest "the body of scientific knowledge," when, in fact, something else was intended, she insisted.

"We'll work on it," said the NIH field commander for the Strategic Plan, Jay Moskowitz, Associate Director for Science Policy and Legislation.

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## New Joint Agency Discussed by US, Germany

A pet scheme of German Chancellor Helmut Kohl, creation of a special institution to promote German-American scientific and other scholarly collaboration, was privately discussed May 29 in Washington by government officials and academics from the two countries. The outcome, however, was inconclusive, even to the point of disagreement over the title of the proposed organization.

The Chancellor, who is said to have a strong personal commitment in this matter, wants to call the creation the US-German Academy. The Americans, associating "Academy" with our most prestigious scientific body, favored the German-US Council for Scholarly Cooperation.

What's clear is that the Germans take this proposition very seriously, with Kohl having broached it to President Bush during a recent visit to the US. Kohl is said to fear that because of economic competition, the US military withdrawal from Europe, and declining interest in foreign studies among young Americans, scientific ties between the US and Germany are loosening, to the disadvantage of Germany. The American response can be described as a combination of a willingness to listen and puzzlement over the apparent intensity of German interest in the proposition.

Taking part in the Washington discussions were the German Minister of Research and Technology, Heinz Riesenhuber, and his protocol counterpart, such as we have in the US government structure, D. Allan Bromley, head of the White House Office of Science and Technology Policy (OSTP). The two met for 90 minutes on May 29, and then the discussions were continued by a mixed delegation of German scholars and government officials

and a US contingent.

The Germans were selected by their Ministry of Research and Technology and the Alexander von Humboldt Foundation, a major German scholarly philanthropy. The American side appears to have been orchestrated by OSTP.

On the US delegation were: Frank Press, President of the National Academy of Sciences; Hanna Gray, President of the University of Chicago; Harold Shapiro, President of Princeton University; Kenneth Prewitt, Vice President of the Rockefeller Foundation; Henry Barschall, of the University of Wisconsin, and a representative of William Danforth, Chancellor of Washington University.

Assuming it comes into being, whatever Kohl's offspring is to be called, it apparently will be a non-governmental body that will embrace science, technology, the humanities, and the social sciences. Before the negotiations began, the US team was made to understand that the deficit-bound US government would not provide funds for the proposed organization. The Germans responded that their government would provide all the financing, if necessary, though the intended scale of funding is not clear at this point.

On the evening prior to the May 29 meeting, a reception was held by the German Embassy in Washington in honor of Minister Riesenhuber, who expressed gratitude for the assistance that the US provided for science in Germany after World War II and for the close scientific relations that exist between the two countries. He also spoke glowingly of the prospects for what he referred to as the "US-German Academy." —DSG

## NIH Strategic Plan

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With the revisionary exercise completed, next to the podium came a consultant who has been hired, Healy explained, to advise NIH on implementing the Plan, Leonard Goodstein. Healy described him as a psychologist who had "helped the IRS implement its strategic plan."

Goodstein told the assemblage, "All of strategic planning is a reflection of values." To implement the NIH Plan, he recommended that "At every step along the way, do what you can to move the Plan forward." He also commented that "What we need here is not a product but a process." The essence of making priorities, he said, is in "deciding between a variety of goods."

In response to an inquiry by SGR, an NIH spokesperson reported that Goodstein's remuneration for consulting for NIH consisted of \$1050 paid in March for "professional services."

The NIH Strategic Plan, such as it is at this point, is actually fogbound in perilous terrain between NIH and its

political and financial masters at the Department of Health and Human Services. The Department chucked back a 500-page draft last winter, with numerous expressions of concern about the budget-busting implications of the Plan, which neglects no possibilities in charting the NIH research agenda into the early years of the next century. A chilling memo from the Department advised NIH: "To avoid creating any false expectations in the science community, NIH should indicate that largescale expansions are not likely, given the current budget resources [SGR, April 15]."

The Plan was to be unveiled in February at a major biomedical pow-wow in San Antonio, with President Bush in attendance, but he dropped out upon the recommendation of HHS officials, who warned that his frugality stance might be embarrassed by the big-spending implications of the plan. The draft itself was dropped from the unveiling agenda and replaced by a skimpy "Framework for Discussion." But work on a full-fledged Plan continues.

The principal objection to the Plan is that NIH has prospered greatly with many things left unsaid. Put it all in writing and who knows what troubles may result?—DSG

## More IN PRINT: Industrial Aid, Trade & Environment

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**Trade and Environment: Conflict and Opportunities** (GPO Stock No. 052-003-01282-1; 109 pp., \$5.50), by the Congressional Office of Technology Assessment (OTA), observes that international trade and environmental regulations are on the rise and often in conflict, as, for example, in the US Marine Mammal Protection Act being invoked against Mexican tuna catches that endanger dolphins. But, OTA says, little is known about the interplay of trade and environment, and, until recently, the two were rarely considered in drafting legislation and international agreements. OTA adds it might be useful to develop "broadly accepted guidelines" on trade and environment. Noting that the Organization for Economic Cooperation and Development has been actively examining the issues, OTA suggests that UN agencies and the General Agreement on Tariffs and Trade should also get involved.

Order from (checks payable to): Superintendents of Documents, USGPO, Washington, DC 20402-9325; tel. 202/783-3238.

**Increasing the Competitiveness of America's Manufacturers: A Review of State Industrial Extension Programs** (82 pp., \$15), from the National Governors' Association (NGA), a followup to a 1989 NGA survey that identified 200 state and federal programs designed to provide technical assistance to small and medium-size firms. This survey reports on 42 of these programs in 28 states, with summaries of their goals, budgets, staffing, etc. Funding for the 42 totaled \$83 million, with nearly half provided by state governments, 11 percent by state universities, and about 25 percent by the federal government—mainly through the five regional manufacturing centers sponsored by the National Institute of Standards and Technology. Half the programs were administered by universities or community colleges, three-quarters have annual budgets of less than \$2 million and most of them serve merely 150-200 clients a year, a very low share of the market, the report acknowledges.

The report notes that the programs are afflicted by the budget woes of their home states, and that with funding remaining stable or slumping slightly for most of them, thoughts are increasingly directed to revenue-raising methods.

Order from: NGA Publications, PO Box 421, Annapolis Junction, Md. 20701; tel. 301/498-3738.

**Semiannual Report to the Congress** (47 pp., no charge) latest from the Office of the Inspector General at the National Science Foundation, detailing a variety of small and medium delinquencies—scientific, financial, legal—from October 1991 to March 1992.

Order from: NSF, Office of Inspector General, 1800 G St. NW, Room 1241, Washington, DC 20550; tel. 202/357-9458.

### To the Editor

## NSF's Social Science Cuts

Regarding "Silence Reigns as Social Sciences Get Clobbered" [SGR June 1]: Support for NSF programs targeted for defunding by the Senate may not have been strident, but it certainly wasn't absent. Rep. George Brown Jr., Chairman of the House Science, Space, and Technology Committee, had written the House budget conferees a letter that should have made SGR proud. But the conferees eventually yielded to pressure from the Senate to slash the NSF budget anyway.... The Chairman's letter—provided the day before the vote to SGR and other reporters—denounced the presumption of Congressmen to overrule peer-review panels on issues of scientific merit.

Moreover, until they reached the floor for a vote on the budget resolution, most House Members ... were unable to find out what the conferees had agreed to and had no idea of the magnitude of the cuts [\$2 million] proposed for NSF. When our Committee staff called the conference staff on the day of the vote ... we were told (as was virtually every other Member office and Committee) that all copies of the resolution had been provided to reporters, but that we would find the relevant info in the previous day's *Congressional Record*. However, a fire at the Government Printing Office cancelled their morning delivery of the *Record* to Capitol Hill. Hence, most Members only found out about the conferee's action by reading copies of the resolution on the Floor, moments before the vote—too late for effective response.

**Rick E. Borchelt,**

Press Secretary

Science, Space, & Technology Comm.

[SGR Editor's Note: It was a confusing day on Capitol Hill].

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## IN PRINT: US-Japan R&D Links, Ag Studies, Etc.

*The publications listed are obtainable as indicated—not from SGR.*

**US-Japan Technology Linkages in Biotechnology: Challenges for the 1990s** (98 pp., \$19, plus \$3 for shipping), a warning of risks of erosion in the US lead in biotechnology, from the National Academy of Sciences Committee on Japan, co-chaired by former Defense Secretary Harold Brown and former NSF Director Erich Bloch. The basic theme is that the US lacks toughness and foresight in protecting a valuable scientific asset. Noting that a lot of money, information, and people are involved in biotech dealings between the two countries, the report concludes that "the linkages formed so far serve as mechanisms primarily for technology transfer from the United States to Japan. Looking at past patterns," it adds, "some wonder whether the technology has been sold too cheaply, and whether US firms can develop effective strategies for making technology linkages with Japan work to their advantage in the future." The Academy committee urges the adoption of strategies by government, academe, and industry to acquire more Japanese technology and increase US marketing there. And, noting an increase of Japanese research funding in the US, it states that "universities could develop guidelines for good practice for contract research, standards for the conduct of foreign researchers in US laboratories, and other measures to ensure reciprocal access for researchers to the laboratories and know-how of the foreign sponsoring organizations."

Also from the Academy: **Marine Aquaculture: Opportunities for Growth** (290 pp., \$34.95, plus \$3 for shipping), says the US lags in developing aquaculture, producing a mere 300,000 metric tons of the 1988 worldwide output of 14 million tons. As a first step, the report recommends strengthening the inter-agency leadership role legislatively assigned to the US Department of Agriculture. The report notes that research funds authorized in aquaculture legislation in 1980 and 1985 have never been appropriated. It recommends establishment of a \$12 million federal research program, streamlining the permit process for coastal aquaculture, and creation of a Congressional committee on aquaculture. The report was prepared by the Academy's Committee on Assessment of Technology and Opportunities for Marine Aquaculture in the United States, chaired by Robert B. Fridley, Executive Associate Dean, College of Agricultural and Environmental Sciences, UC Davis.

And another from the Academy: **Agriculture and the Undergraduate** (280 pp., \$33, plus \$3 for shipping), 29 papers from a meeting in April 1991 cosponsored by the Academy's Board on Agriculture and the USDA Office of Higher Education Programs, all focused on problems, innovations, curriculum, etc. in college-level ag studies.

Order from (checks payable to): National Academy Press, 2101 Constitution Ave. NW, Washington, DC 20418; tel 1-800/624-6242; in the Washington, DC area: 202/334-3313.

**US-Japan Codevelopment: Update of the FS-X Program** (GAO/NSIAD-92-165; 40 pp., no charge), from the General Accounting Office (GAO), another dour report on US-Japan sci/tech relations. This one concerns the 1987 deal to develop the FS-X fighter, a "derivative" of the General Dynamics F-16, and produce six prototypes, with Japan paying the bills and the US providing design and development assistance. The scheme was intended to provide General Dynamics with income and a window on Japanese aviation without transferring the most advanced US technology. The GAO report notes that under the FS-X agreement, the US is supposed to have access, at no cost, to technologies that Japan derives from F-16 technologies as well as access, at prices to be determined, to "non-derived" technologies for radar, the mission computer, the inertial reference system, and the integrated electronic warfare system. It's too early to tell how the arrangement will work out, GAO says, but adds that "US government officials noted that Japan has not always been forthcoming with information about its FS-X technologies." The GAO also reports that FS-X development costs have increased by 70 percent from the preliminary 1987 estimate of \$1.1 billion.

Also from the GAO: **Nuclear Health and Safety: More Can Be Done to Better Control Environmental Restoration Costs** (GAO/RCED-92-71; 46 pp., no charge), says the Department of Energy (and its predecessors), having scattered nuclear-weapons waste for over 40 years, has underestimated the costs of cleanup. By how much is not certain, the report says, since DOE has not updated its 1988 estimates, which ranged from \$35 billion to \$64 billion. But, according to the GAO, "a comparison of DOE's 5-year plan shows, in constant 1991 dollars, a \$3.5 billion, or 48 percent, increase over the past 2 years in estimated funds necessary for fiscal 1991-95."

Order from: USGAO, PO Box 6015, Gaithersburg, Md. 20877; tel. 202/275-6241.

**The Going Rate: What It Really Costs to Drive** (32 pp., \$9.95, plus \$3 for shipping; available in July), from the World Resources Institute, a Washington research organization focused on environmental issues, says that if the "full costs" of driving were charged to those who drive, they'd be paying an additional \$300 billion a year, or, in gas-price equivalents, another "several" dollars a gallon. Cited as costs which motorists are passing on to others: pollution-induced crop losses, military protection of Middle East oil supplies, time spent in traffic, global change, etc. "The enormity of the problems spawned by the use of cars and trucks in the United States demands a full accounting of these unborne social costs," says the report, by James J. MacKenzie, Roger C. Dower, and Donald D.T. Chen.

Order from (checks payable to): WRI Publications, PO Box 4852, Hampden Station, Baltimore, Md. 21211; tel. 1-800/822-0504.

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